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Mexico: Gas Export Prospects

An Intelligence Assessment

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Mexico: Gas Export Prospects

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An Intelligence Assessment

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Mexico:
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Key Judgments

*Information available
as of 10 January 1983
was used in this report.*

The deepening financial crisis in Mexico greatly magnifies the importance of petroleum export earnings to the economy. Bankers and government officials in Mexico and abroad are asking what measures Mexico should take to raise additional revenue by boosting oil and gas exports.

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The United States is the only customer for Mexico's exports of natural gas. Over the next few years, we believe Mexico will be unable to boost gas exports earnings substantially above the level of about \$500 million reached in 1982 because of a saturated US market and because of financial and technical constraints on Mexico's ability to deliver more gas. Should Mexico overcome the difficulties associated with increasing gas production, we believe domestic consumption of natural gas is likely to grow and reduce the amount available for export.

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weakness in the US gas market is likely to be the major constraint on Mexico's ability to export more gas at least over the next several years. Significant quantities of US natural gas are shut-in due to reductions in demand caused by conservation and the recession. Most of this gas would be available at prices well below the current border price for Mexican gas.

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the gas supply "bubble" that now dominates the US market could persist through the late 1980s. Even if demand should rebound unexpectedly, Mexico probably would face stiff competition from Canada to supply additional gas to the US market.

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Should Mexico opt to reduce gas prices enough to replace Canadian and domestic gas in the US market, major technical and investment problems would still have to be overcome. Most of Mexico's incremental gas production would be tied to increased offshore oil production and would require a large investment for collection and treatment, especially because of its high sulfur content. Mexico's financial troubles, however, probably will prohibit any substantial effort to increase gas exports in the next two or three years. Unless scheduled investment in gas processing and pipeline compressor equipment is accelerated, Pemex probably will have to continue to flare sizable volumes of gas through 1984.

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January 1983

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Contents

	<i>Page</i>
Key Judgments	iii
Introduction	1
Resource Base	1
Current Production	1
Domestic Consumption	2
Exports: The Marketing Problem	3
Gas Transportation and Processing	4
1985 and Beyond: The Canadian Problem	4

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Figure

Mexico: Gas-Producing Areas	3
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Table

Mexico: Natural Gas Production	2
--------------------------------	---

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Mexico: Gas Export Prospects

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Introduction

In 1981 Pemex, Mexico's state oil company, exported about 290 million cubic feet per day (cf/d) of natural gas to the United States, bringing in revenues of about \$530 million. In the first nine months of 1982, Pemex was able to deliver only about 260 million cf/d—almost 15 percent below the contracted volume of 300 million cf/d—because of rapid increases in domestic consumption and technical difficulties in gas processing and distribution. Although Pemex officials are confident they will overcome these problems in 1983, [] exports could be even lower because of the weak US market. []

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Resource Base

Mexico's decisions on gas export policies over the long run will be based on assessments of gas reserves. According to Pemex, Mexico's proved gas reserves now stand at 75.4 trillion cubic feet—enough to sustain production at current levels for 50 years.

[] we believe Mexico's official reserve estimate substantially overstates the size of proved recoverable reserves. Altogether, we believe proved, economically recoverable reserves total no more than 35 trillion cubic feet.

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Current Production

According to Pemex, Mexico's gas production (including flared gas) averaged 4.24 billion cf/d from January through September 1982, an increase of nearly 5 percent from levels a year earlier but a sharp slowdown from an average annual rate of nearly 20 percent from 1978 to 1981. []

Associated gas production from the onshore Reforma area is currently about 2.2 billion cf/d—more than half of Mexico's output. Our analysis, which is in line with Pemex forecasts, indicates that gas production from these fields is unlikely ever to exceed 2.6 billion cf/d. Associated gas production from the offshore Campeche fields is currently about 700 million cf/d, and associated production from older onshore fields—including, for example, the old Golden Lane Fields—totals 350 million cf/d. Virtually all of Mexico's associated gas is sour,¹ requiring desulfurization before it can be used or transported over long distances.

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Mexico produces about 1 billion cf/d of nonassociated gas, most of which does not require desulfurization. Production from Mexico's Reynosa fields along the border with Texas has declined in the past two years from about 400 million cf/d to 375 million cf/d. The nearby Sabinas Basin has been a major disappointment to Pemex: production declined abruptly from about 180 million cf/d in 1979 to about 75 million cf/d currently. Nonassociated gas production from the Ciudad Pemex fields in the Reforma area is currently about 550 million cf/d. []

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In our judgment, substantial additional exploration and development drilling will be needed to pin down Mexico's ultimate recoverable reserves of natural gas.

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¹ Gas containing significant amounts of hydrogen sulfide and/or carbon dioxide. []

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Mexico: Natural Gas Production*Million cubic feet per day*

	1977	1978	1979	1980	1981	1982 ^a
Production	2,000	2,560	2,920	3,550	4,060	4,250
Flared	600	710	360	440	665	600
Delivered to pipelines	1,400	1,850	2,560	3,110	3,395	3,650
Consumption	1,395	1,850	2,560	2,830	3,105	3,380
Exports	5	0	0	280	290	270

^a Estimated.

A more likely oil production scenario, we believe, would be crude oil output on the order of 3.5 million b/d within the next several years. Following this pattern we would expect total gas production to increase to about 5.0 billion cf/d. Gas flaring would decline from the current level of about 600 million cf/d to nearly zero by 1985 because of increased domestic consumption and an improved capability to process gas produced.

Domestic Consumption

The rate of growth of domestic gas consumption will be a key determinant of how much gas there is to export. Since it rejected the plans to export 2 billion cf/d of gas to the United States in 1977, Mexico has made a concerted effort to use gas domestically, freeing crude oil for exports. Exports to the United States have been limited to 300 million cf/d, and a national gas pipeline network, which now includes about 12,000 kilometers of pipeline, has been constructed.

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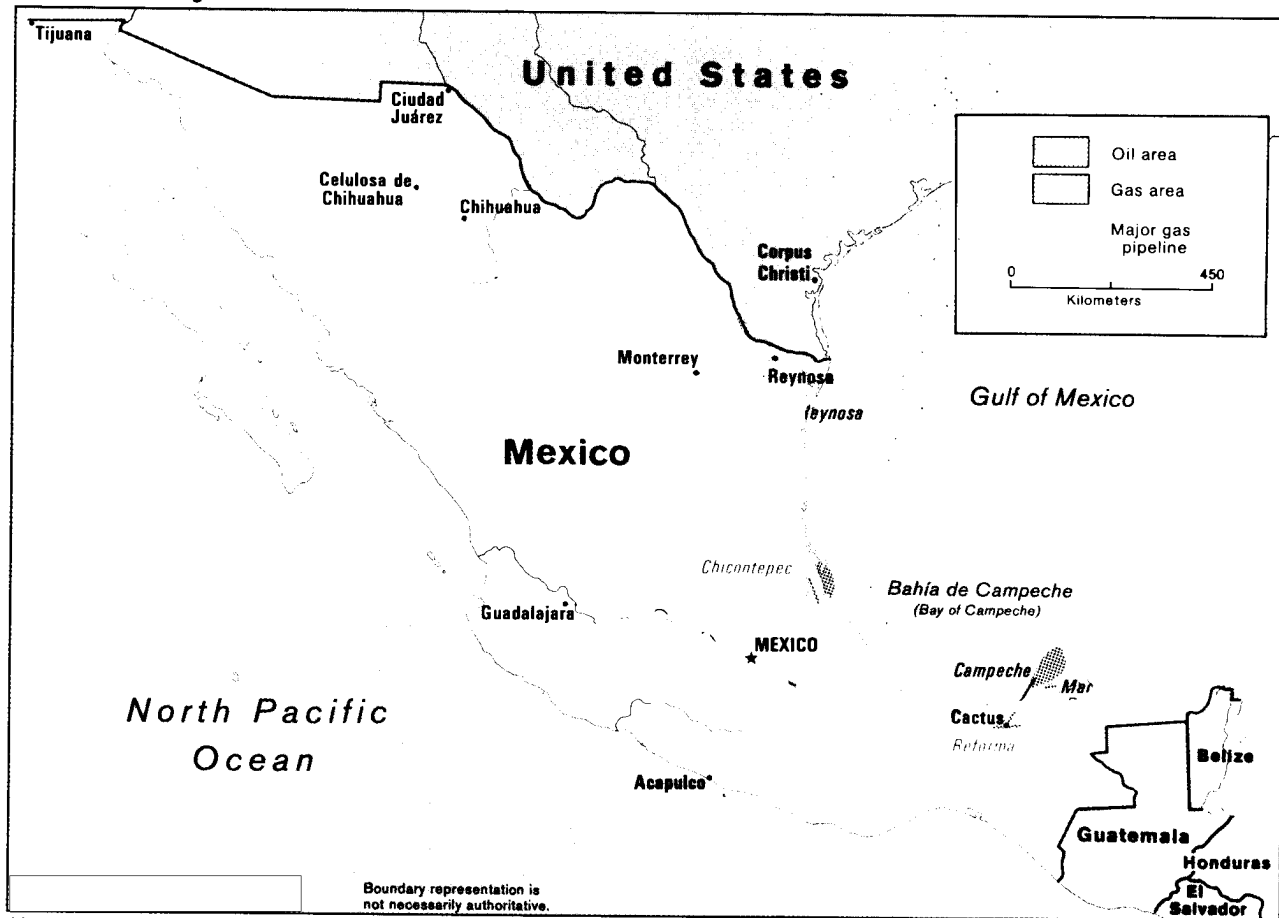
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Mexico: Major Oil and Gas Areas

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The growth of natural gas consumption probably will slow over the next two or three years as a result of the slowdown in Mexico's economic growth and recent government decisions to increase gas prices—in particular an increase in June 1982 that raised gas prices relative to those for fuel oil. Even though both fuels are still heavily subsidized, gas prices per million Btu are nearly 70 percent higher than fuel oil prices. Although most Mexican industrial facilities are capable of burning gas or fuel oil, we do not believe that

Mexico has the ready capability to replace large quantities of natural gas in the near term because of limited domestic production of residual fuel oil. Moreover, Pemex—which could potentially make a large contribution to reducing domestic gas usage—is resisting fuel switching because of increased maintenance problems associated with burning high sulfur fuel oil.

Exports: The Marketing Problem

In the near term, Mexico probably could not substantially increase gas exports to the United States without cutting prices. Significant quantities of US natural gas are shut in because of reductions in demand

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caused by conservation and the recession. Most of this gas would be available at prices below the current border price for Mexican gas of \$4.94 per million Btu.

[redacted] Mexico may be forced to lower prices just to maintain exports at current levels. Take-or-pay provisions in the US-Mexican contract require that US companies take at least 180 million cf/d. [redacted]

As long as the current market continues, there is a high chance that increased imports of gas would be opposed in US Government regulatory proceedings by domestic producers who have shut-in production, by the customers of the gas purchasing consortium who would be forced to pay high prices for imported gas when cheaper domestic supplies are available, and by state utility regulatory commissions who may balk at arguably unneeded, high-priced supplies. In contested cases, such regulatory proceedings often take 12 to 24 months. [redacted]

[redacted] the surplus of gas in the United States could persist into the late 1980s. [redacted] with oil prices expected to decline in real terms through the mid-1980s, residual fuel oil will be a major competitor to natural gas in the industrial sector. As a result, gas demand is seen as remaining flat, and gas shut-in problems are expected to persist into the mid-1980s. Even with a moderate economic recovery, several other industry forecasts show a decline in gas demand through 1985 and only a slight increase by 1990. [redacted]

Gas Transportation and Processing

Even if Mexico cuts gas prices to stimulate export sales, bottlenecks in its gas transportation and processing facilities could prevent any substantial increase in exports through the mid-1980s. In 1981 Pemex completed a 915-mm pipeline to transport gas from Campeche to onshore treatment facilities at Ciudad Pemex and Cactus. This line is expected to transport a third of Mexico's total gas production by the mid-1980s. Installation of compressors at seven platforms along the pipeline—each platform costing about \$80 million—is far behind schedule. [redacted]

[redacted] the availability of treatment facilities for gas desulfurization and for extraction of gas liquids is the chief constraint to utilization of new gas recovered from offshore fields if problems with the pipeline are overcome. Although the capacity of these facilities is scheduled to be increased sharply over the next three years, projected capacity could still fall short of processing requirements. [redacted]

[redacted] We believe accelerated construction of treatment facilities probably could solve the problem by late 1984 or early 1985. Such an effort would require an investment of several hundred million dollars, an amount that debt-plagued Mexico can ill afford. [redacted]

Increased natural gas exports also would require expansion of pipeline facilities in Mexico. The new pipeline link and compressor stations needed to export the gas would require six months to a year to construct. US import facilities would have to be expanded by the construction of a 185-kilometer pipeline from the Mexican border to an existing line near Corpus Christi. Construction also would have to await US Government regulatory approvals, which even if uncontested can take six months or longer. [redacted]

1985 and Beyond: The Canadian Problem

Mexico will have to overcome competition from Canada for increased gas sales to the US market both in the near term and beyond. Canada faces a sizable gas surplus of its own, and the government has taken steps to pave the way for a substantial increase in gas exports over the decade. Canada's National Energy Board (NEB) has authorized exports of up to 4.4 billion cf/d to the United States—almost double current exports—and a number of companies are

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seeking further export permits. Present Canadian deliveries of gas to the US market are only running about 60 percent of authorized levels. According to Canada's Energy Minister, the NEB is likely to conclude from ongoing gas export hearings that Canada has an exportable gas surplus of 10 to 15 trillion cubic feet, enough to allow export of an additional 2 to 3 billion cf/d over the next 10 to 15 years.

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According to press reports, some NEB officials favor modifying Canada's uniform border price policy in order to make export prices more flexible and sensitive to market conditions. If Canada were to match Mexican price cuts in order to maintain or increase its market share, Mexico would find it hard to realize any significant gain in gas export revenues.

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